

REMARKS

Applicants enclose herewith a certified copy of Taiwan Patent Application No. 092112920, the foreign priority document in the present application.

In response to the Examiner's objection to claim 1, Applicants have amended claim 1 without any intention of disclaiming equivalents thereof. No new matter is added by this Amendment. Reconsideration is respectfully requested.

Claims 1-11 are pending in this Application and are each rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,051,454 to Anda et al. ("Anda") in view of U.S. Patent No. 4,523,000 to Hatada et al. ("Hatada"), U.S. Patent No. 6,767,693 to Okoroanyanwu ("Okoroanyanwu"), and U.S. Patent No. 5,712,175 to Yoshida ("Yoshida").

With respect to independent claim 1, Applicants respectfully submit that this claim, as amended, is patentable over Anda in view of Hatada, Okoroanyanwu, and Yoshida for at least the reason that combining these references is improper.

As pointed out by the Office Action on page 4, Anda does not teach reflowing the photoresists using a hot plate within a predetermined period of time and temperature, such that the recess of the gate is formed with a nanometer-sized width. While Okoroanyanwu does appear to describe a heat reflow process involving a photoresist to reduce the diameter of holes and vias, it is improper to combine Okoroanyanwu with Anda, as Okoroanyanwu teaches away from the process recited in claim 1. For example, Okoroanyanwu states that this very heat reflow process that manipulates the photoresist pattern is undesirable, as it is susceptible to "unpredictable mechanical deformation as well as poor mechanical stability." Column 2, lines 25-27. As such, one skilled in the art would not look to Okoroanyanwu, a reference that discredits the heat reflow process as a means of reducing the diameters of holes, to correct the defects of Anda.

Additionally, while Yoshida does appear to show a resist reflow, this resist reflow is used to round the corners of a layered pattern. Column 4, lines 4-10. Yoshida does not teach or suggest using a heat reflow process for narrowing the width of a recess of a gate to the order of a nanometer, a limitation of amended claim 1. As such, one skilled in the art would not look to Yoshida to supply what Anda lacks with respect to claim 1.

Furthermore, Applicants respectfully submit that amended claim 1 is patentable over Anda in view of Hatada, Okoroanyanwu, and Yoshida for the additional reason that the hot plate

limitation of amended claim 1 produces unexpected results. While neither Anda, Hatada, Okoroanyanwu, nor Yoshida disclose a hot plate, the Office Action on page 4 states that it would have been obvious to modify Anda to use a hotplate, as a "hotplate is a heating device typically used in a laboratory set up for routine heating purposes."

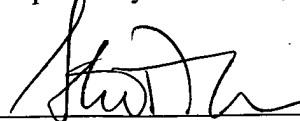
However, the hotplate limitation of amended claim 1, as used in some embodiments of the present invention, produces unexpected results such as reducing particle contamination and increasing the uniformity of the substrate. It is found that the use of routine heating devices exposes the substrates to particle contamination due to convection current air flows laden with foreign particles that are characteristic of routine heating mechanisms. As the substrates may still contain solvents, the foreign particles in the air may adhere to the substrate, thus contaminating the substrate. In contrast, the use of a hotplate as a heating mechanism eliminates this contamination and ensures the uniformity of the substrate, thus leading to the unexpected result of a higher quality fabrication of the gate.

For at least the above reasons, amended claim 1 is patentable over Anda in view of Hatada, Okoroanyanwu, and Yoshida. Claims 2-11 depend either directly or indirectly on independent claim 1, and include all the limitations thereof. Therefore, Applicants respectfully submit that these claims are patentable as well, at least for the reasons discussed above with respect to amended claim 1.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and the withdrawal of all grounds of rejection, and allowance of claims 1-11 in due course. The Examiner is invited to contact Applicants' undersigned representative by telephone at the number listed below to discuss any outstanding issues.

Respectfully submitted,



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